

WHAT IS CLAIMED IS:

- 1/ Surgical ring designed to be implanted in the body of a patient around biological organs having a pouch or a duct, in order, on the one hand, to form a closed loop between its two extremities (1, 2), thus forming a first (1) and second (2) extremities and, on the other hand, reduce the diameter of the opening of said organ when it is tightened by the ring, said ring comprising a system for reversibly controlling the variation in its diameter, said system comprising a flexible filiform element (4), characterized in that:
- said flexible filiform element (4) is inserted longitudinally with possibility of sliding into the material constituting the body of the ring, substantially between the first (1) and second (2) extremities, so as to define a fixed portion (5) united with the first extremity (1) and a free portion (7) which is functionally associated with an actuator (8) mounted on the ring near the second extremity (2), such that the actuator (8) ensures reversible translation of the flexible filiform element (4) in order to obtain a variation associated with the diameter of the ring,
 - said free portion (7) is provided with a means of force cooperation (10) with the actuator (8), said means of force cooperation (10) being formed of a screw thread pitch.
- 2/ Ring according to claim 1, characterized in that the flexible filiform element (4) is formed of a flexible core (11) on which at least one spring with un-joined loops (12) is affixed and coaxially wound, making the screw thread pitch.
- 3/ Ring according to claim 2, characterized in that flexible filiform element (4) comprises two un-joined

- loop springs (12A, 12B) so as to form the screw thread pitch, respectively, a first spring (12A) wound helicoidally along the flexible core (11) and a second spring (12B) of greater exterior diameter, with loops (14) of rectangular transverse section, said first spring (12A) is interposed between the loops (14) of the second spring (12B) in order to maintain a constant square screw thread pitch.
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- 10 4/ Ring according to one of claims 1 to 3, characterized in that the actuator (8) is provided with a nut to ensure the screw thread pitch drive.
- 15 5/ Ring according to one of claims 1 to 4, characterized in that it is formed of a main body based on a compressible material (20) in which is inserted, with the possibility of sliding, the flexible filiform element (4).
- 20 6/ Ring according to claim 5, characterized in that the compressible material (20) is ePTFE.
- 25 7/ Ring according to claim 5 or 6, characterized in that it is provided outside with a protective covering (3), made for example of silicone.
- 8/ Ring according to one of claims 1 to 7, characterized in that the actuator (8) is an electric motor.
- 30 9/ Ring according to claim 8, characterized in that the electric motor is linked to a receiving antenna (30) designed to be implanted in the body of the patient.
- 35 10/ Ring according to claim 9, characterized in that the receiving antenna (30) is collapsible.

- 11/Ring according to claim 9 or 10, characterized in that
the electric motor is linked to the receiving antenna
(30) by an electrical connection (31), protected by a
duct (33) at the extremity of which is mounted the
5 receiving antenna (30).
- 12/Ring according to claim 10 or 11, characterized in
that the receiving antenna (30) is made in one piece,
for example in the shape of a disk, which is
10 collapsible on itself substantially according to the
diameter of the disk.
- 13/Ring according to one of claims 1 to 12, characterized
in that its external envelope (3) features a
15 reinforced dorsal periphery (25), in order to favor
radial variation of the diameter of the ring at its
internal periphery, opposite its dorsal periphery.
- 14/Ring according to claim 13, characterized in that the
20 reinforced dorsal periphery (25) is formed of a dorsal
thickness of the external envelope that is greater
than the rest of the external envelope (3) and/or of a
polymeric material of greater hardness.
- 25 15/Ring according to claim 13 or 14, characterized in
that the reinforced dorsal periphery (25) comprises a
reinforcing insert (26), preferably made of metal.
- 16/Ring according to one of the preceding claims,
30 characterized in that it is made of a gastric ring
designed to be implanted around the stomach or
esophagus.
- 17/Ring according to one of claims 1 to 16, characterized
35 in that it is formed of a ring designed to be
implanted around the bladder or urinary tracts, or

around gastro-intestinal tracts or around blood vessels.

- 18/System for restricting and remote control of ingestion
5 of food into the stomach of a patient, comprising:
- a gastric ring in compliance with one of claims 1
to 18 and comprising, as an actuator (8), an
electric motor which is linked to a receiving
10 antenna (30) so as to receive a control and power
signal,
 - an emitting antenna arranged outside the patient,
in order to send a control and power signal to the
receiving antenna (30), said emitter antenna being
functionally linked to a control interface.
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